

## CLAIMS

1. A document comprising at least one drawing or data produced by deposition or inclusion of pigments or dyes which can be read optically, and a hologram made from a copy of said drawing or said data, characterized in that the hologram comprises deformations introduced during its recording which make the copy read from the drawing or from said data different.
2. The document as claimed in claim 1, characterized in that the deformations are aberrations.
3. The document as claimed in claim 1 or 2, characterized in that the deformations are scattering effects.
4. The document as claimed in one of the preceding claims, characterized in that the hologram is superimposed onto at least one photosensitive layer with a coding function (HS).
5. The document as claimed in claim 4, characterized in that said photosensitive layer is a diffraction grating.
6. The document as claimed in claim 4 or 5, characterized in that said photosensitive layer contains specific but not personalized data, identical for all documents of the same type.
7. The document as claimed in one of claims 4 to 6, characterized in that the coding function comprises at least one of the following optical properties: colorimetry with multiple angular ranges of visibility, high-resolution visible with an additional source.

8. The document as claimed in one of claims 4 to 7, characterized in that the man [sic] and the photosensitive layer are combined by "anti-peel" bonding means.
- 5
9. The document as claimed in one of the preceding claims, characterized in that the hologram is transparent so that data located under it, on the document, can be read.
- 10
10. The document as claimed in one of the preceding claims, characterized in that the hologram can be read only under lighting of certain wavelengths.
- 15
11. The document as claimed in one of the preceding claims, characterized in that the hologram can be read at different wavelengths from different angles.
- 20
12. The document as claimed in one of the preceding claims, characterized in that the hologram is combined with a reflector with narrow band reflectivity.
- 25
13. The document as claimed in one of the preceding claims, characterized in that the hologram represents at least one other image appearing in a plane different to that of said deformed copy.
- 30
14. The document as claimed in claim 13, characterized in that said image can be read at a wavelength different from that of said deformed copy.
- 35
15. Document according to one of the preceding claims, characterized in that the hologram comprises data printed on its surface.

16. A document security system, comprising a prerecorded or electrically controllable optical modulator (23) in which the image of at least part of the document is recorded, said modulator being  
5 designed to be combined with a layer of photosensitive material (21), at least one first light source making it possible to transmit a first reference wave (R) to the layer of photosensitive material and a second incident wave  
10 (I) onto said modulator (23) and giving rise to a third object wave (O) which is transmitted to the layer of photosensitive material in order to interfere with the reference wave (R) in this layer, characterized in that it comprises in the  
15 path of the first wave or of the second of means (25) inducing scrambling in the hologram recorded in the layer of photosensitive material.
17. The system as claimed in claim 16, characterized  
20 in that it comprises a mirror (24) placed on the side opposite the layer of photosensitive material (21) with respect to the modulator, this mirror receiving the reference wave (R) after passing through the layer of photosensitive material and  
25 the modulator and reflecting this wave in order to give rise to the second wave (I) which illuminates the modulator which transmits the third wave (O) to the layer of photosensitive material, the reference (R) and object (O) waves being  
30 counterpropagating and perpendicular to the planes of the modulator and of the photosensitive layer.
18. The system as claimed in claim 16, characterized  
35 in that it comprises a second source which is coherent like the first source and emitting the second wave (I), the first and the second source being located on each side of the modulator

assembly and layer of photosensitive material.

19. The system as claimed in claim 16, characterized in that it comprises, between the modulator (23) and the layer of photosensitive material (21), an optical device (80) making it possible to image the modulator (23) in the plane of the layer of photosensitive material (21).
20. The system as claimed in claim 19, characterized in that it comprises a beam-splitter plate (81), the first source supplying the first reference wave (R) to the beam-splitter plate which retransmits this first wave to the layer of holographic material, a second source supplying the second wave (I), coherent with the first, toward the modulator which retransmits the third wave (A) to the layer of holographic material through the optical device (80) and the beam-splitter plate (81).
21. The system as claimed in either of claims 16 to 19, characterized in that it comprises at least one additional spatial light modulator (27, 28) not located in the plane of said optical modulator (23) and making it possible to record, in the hologram, at least one additional image appearing, on reading, in a plane different from said image of the part of the document.
22. The system as claimed in claim 21, characterized in that the additional image and the image of the part of the document are recorded at different wavelengths and/or different angles of incidence of the recording beams.
23. The system as claimed in one of claims 16 to 19,

characterized in that the first reference wave (R) and the third object wave (O) are plane, coherent and collinear waves.

- 5 24. The system as claimed in one of claims 16 to 23, characterized in that said means inducing scrambling are placed against or almost against the layer of photosensitive material.
- 10 25. The system for reading a document comprising a hologram containing an image of part of said document, said image being scrambled, characterized in that it comprises a device for correcting said scramblings, or revealer (27), said hologram being readable through the revealer.
- 15 26. The system as claimed in claim 25, characterized in that it comprises a marking device making it possible to position the hologram to be read facing the revealer (27).
- 20 27. The system as claimed in claim 26, characterized in that it comprises lugs intended to accommodate notches from the document.
- 25 28. The system as claimed in claim 25, characterized in that the revealer comprises optical markers intended to be made to coincide with the markers of the document.